production thereof is sold or used in a nonmining process prior to the alteration of its inherent mineral content by some form of beneficiation, concentration, or ore dressing. An ore or mineral does not lose its classification as a crude mineral product by reason of the fact that, before sale or use in a nonmining process, the ore or mineral may be crushed or subjected to other processes which do not alter its inherent mineral content. Whether the portion of production sold or used in the form of a crude mineral product is a significant portion of the total production of an ore or mineral is a question of fact.

(4) *Type of processes recognized as mining for ores or minerals covered by section 613(c)(4)(D).* Cyanidation, leaching, crystallization, and precipitation, which are listed in section 613(c)(4)(D) as treatment processes considered as mining, and the processes (or combination of processes) which are substantially equivalent thereto, will be recognized as mining only to the extent that they are applied to the taxpayer's ore or mineral for the purpose of separation or extraction of the valuable mineral product or products from the ore, or for the purpose of separation or extraction of the mineral or minerals from other material extracted from the mine or other natural deposit. A process, no matter how denominated, will not be recognized as mining if the process beneficiates the ore or mineral to the degree that such process, in effect, constitutes smelting, refining, or any other nonmining process within the meaning of paragraph (g) of this section. As used in section 613(c)(4)(D) and subparagraph (2)(i) *(d)* of this paragraph, the term *concentration* has the meaning set forth in the first two sentences of subparagraph (3)(i) of this paragraph.

(5) *Processes recognized as mining under section 613(c)(4)(I).* Under the authority granted the Secretary or his delegate in section 613(c)(4)(I), the processes which are described in subdivisions (i) through (iv) of this subparagraph, and the processes necessary or incidental thereto, are recognized as mining processes for taxable years beginning after December 31, 1960. The processes described in subdivisions (i) through (iv) of this subparagraph are in addition to the specific processes recognized as mining under section 613(c)(4). Such additional processes are:

(i) Crushing and grinding, but not fine pulverization (as defined in paragraph (g) (6) (v) of this section);

(ii) Size classification processes applied to the products of an allowable mining process;

(iii) Drying to remove free water, provided that such drying does not change the physical or chemical identity or composition of the mineral; and

(iv) Washing or cleaning the surface of mineral particles (including the washing of sand and gravel and the treatment of kaolin particles to remove surface stains), provided that such washing or cleaning does not activate or otherwise change the physical or chemical structure of the mineral particles.

(6) In the case of a process applied subsequent to a nonmining process, see paragraph (g)(2) of this section.

(g) *Nonmining processes*—(1) *General rule.* Unless they are otherwise provided for in paragraph (f) of this section as mining processes (or are necessary or incidental to processes listed therein), the following processes are not considered to be mining processes—electrolytic deposition, roasting, calcining, thermal or electric smelting, refining, polishing, fine pulverization, blending with other materials, treatment effecting a chemical change, thermal action, and molding or shaping. See subparagraph (6) of this paragraph for definitions of certain of these terms.

(2) *Processes subsequent to nonmining processes.* Notwithstanding any other provision of this section, a process applied subsequent to a nonmining process (other than nonmining transportation) shall also be considered to be a nonmining process. Exceptions to this rule shall be made, however, in those instances in which the rule would discriminate between similarly situated producers of the same mineral. For example, roasting is specifically designated in subparagraph (1) of this paragraph as a nonmining process, but in the case of minerals referred to in section 613(c)(4)(C) sintering is recognized as a mining process. If certain

impurities in an ore can only be removed by roasting in order to bring it to the same shipping grade and form as a competitive sintered ore of the same kind which requires no roasting, the subsequent sintering of the roasted ore will be treated as a mining process. In that case, however, the roasting of the ore will nonetheless continue to be treated as a nonmining process.

(3) *Transportation for the purpose of marketing or distribution; storage.* Transportation the primary purpose of which is marketing, distribution, or delivery for the application of only nonmining processes shall not be considered as mining. Nor shall transportation be considered as mining merely because, during the course of such transportation, some extraneous matter is removed from the ore or mineral by the operation of forces of nature, such as evaporation, drainage, or gravity flow. Similarly, storage or warehousing of manufactured products shall not be considered as mining. The preceding sentence shall apply even though, during the course of such storage or warehousing, some extraneous matter is removed from the ore or mineral by the operation of forces of nature, such as evaporation, drainage, or gravity flow.

(4) *Manufacturing, etc.* The production, packaging, distribution, and marketing of manufactured products, and the processes necessary or incidental thereto, are nonmining processes.

(5) *Transformation processes.* Processes which effect a substantial physical or chemical change in a crude mineral product, or which transform a crude mineral product into new or different mineral products, or into refined or manufactured products, are nonmining processes except to the extent that such processes are allowed as mining processes under section 613(c) or under paragraph (f) of this section.

(6) *Definitions.* As used in section 613(c)(5) and this section:

(i) The term *calcining* refers to processes used to expel the volatile portions of a mineral by the application of heat, as, for example, the burning of carbonate rock to produce lime, the heating of gypsum to produce calcined gypsum or plaster of Paris, or the heating of clays to reduce water of crystallization.

(ii) The term *thermal smelting* refers to processes which reduce, separate, or remove impurities from ores or minerals by the application of heat, as, for example, the furnacing of copper concentrates, the heating of iron ores, concentrates, or pellets in a blast furnace to produce pig iron, or the heating of iron ores or concentrates in a direct reduction kiln to produce a feed for direct conversion into steel.

(iii) The term *refining* refers to processes (other than mining processes designated in section 613(c)(4) or this section) used to eliminate impurities or foreign matter from smelted or partially processed metallic and nonmetallic ores and minerals, as, for example, the refining of blister copper. In general, a refining process is designed to achieve a high degree of purity by removing relatively small amounts of impurities or foreign matter from smelted or partially processed ores or minerals.

(iv) The term *polishing* refers to processes used to smooth the surface of minerals, as, for example, sawing applied to finish rough cut blocks of stone, sand finishing, buffing, or otherwise smoothing blocks of stone.

(v) The term *fine pulverization* refers to any grinding or other size reduction process applied to reduce the normal topsize of a mineral product to less than .0331 inches, which is the size opening in a No. 20 Screen (U.S. Standard Sieve Series). A mineral product will be considered to have a normal topsize of .0331 inches if at least 98 percent of the product will pass through a No. 20 Screen (U.S. Standard Sieve Series), provided that at least 5 percent of the product is retained on a No. 45 Screen (U.S. Standard Sieve Series). Compliance with the normal topsize test may also be demonstrated by other tests which are shown to be reasonable in the circumstances. The normal topsize test shall be applied to the product of the operation of each separate and distinct piece of size reduction equipment utilized (such as a roller mill), rather than to the final products for sale. Fine pulverization includes the repeated recirculation of material